

Message Text

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TAGS: TSPA, UR

SUBJECT: SPACE AGREEMENT: SPACE BIOLOGY AND MEDICINE
----- (04.05.02)

FOR SCICOUN

1. PLEASE PASS THE FOLLOWING MESSAGE FROM DR. DAVID WINTER,
US CO-CHAIRMAN SPACE BIOLOGY AND MEDICINE WORKING GROUP, TO
HIS SOVIET COUNTERPART, DR. N. GUROVSKY, WITH COPIES TO
ACADEMICIAN GAZENKO AND INTERCOSMOS.

2. JANUARY 21, 1977

DR. NIKOLAI N. GUROVSKY
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CHAIRMAN OF THE SOVIET WORKING GROUP
- ON SPACE BIOLOGY AND MEDICINE
CHIEF OF THE DEPARTMENT OF SPACE
- BIOLOGY AND MEDICINE
THIRD MAIN ADMINISTRATION
USSR MINISTRY OF HEALTH
MOSCOW, USSR

DEAR DR. GUROVSKY:

AS DISCUSSED DURING OUR BI-WEEKLY TELEPHONE CALL ON JANUARY 5, I AM FORWARDING THE FOLLOWING COMMENTS FROM DR. HENRY LEON CONCERNING DR. LUBA SEROVA'S PROPOSED REVISIONS TO THE K003 FINAL REPORT.

- 1. CONCERNING THE REVISION OF THE TEXT ON PAGE 3:
ACCEPTED AS GIVEN ON DECEMBER 1 TELECON.

- 2. CONCERNING THE REARRANGEMENT OF THE DISCUSSION:
ACCEPTED.

- 3. CONCERNING THE DELETION ON PAGE 12, FOURTH LINE:
ACCEPTED.

- 4. CONCERNING THE ADDITION ON PAGE 12, AFTER THE FIRST PARAGRAPH: DR. LEON AGREES WITH THE MEANING OF THIS PARAGRAPH, BUT HE SUGGESTS CHANGING THE WORDING SLIGHTLY TO READ AS FOLLOWS: "IN ADDITION IT SHOULD BE NOTED THAT THE DECREASE IN BODY TEMPERATURE AND INCREASE IN OXYGEN CONSUMPTION AND MOTOR ACTIVITY INFLIGHT CANNOT BE ASCRIBED ONLY TO THE FALL IN AMBIENT TEMPERATURE. IT IS TRUE THAT THE CABIN TEMPERATURE IN-FLIGHT WAS LOWER THAN THE VIVARIUM, AND OCCASIONALLY DROPPED TO 19.5-20 DEGREES CENTIGRADE. HOWEVER, IDENTICAL TEMPERATURE FLUCTUATIONS OCCURRED IN THE SYNCHRONOUS CONTROL, YET A NUMBER OF PHYSIOLOGICAL PARAMETERS SHOWED CONSIDERABLY LESS VARIA- UNCLASSIFIED

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TION WHEN THIS GROUP WAS COMPARED TO THE VIVARIUM CONTROLS. THAT IS, BODY TEMPERATURE AND METABOLIC CHANGES IN THE FLIGHT ANIMALS WERE IN PART BROUGHT ABOUT BY THE DECREASE IN CABIN TEMPERATURE. HOWEVER, THEY APPEAR TO BE ENHANCED BY WEIGHTLESSNESS EFFECTS, AND THEREFORE CAN BE CONSIDERED AS A RESPONSE OF THE ANIMAL'S BODY TO WEIGHTLESSNESS."

- 5. CONCERNING THE DISAGREEMENT WITH THE LAST THREE SENTENCES OF THE REPORT: ACCEPTED. DR. SEROVA'S REMARKS AS GIVEN ON DECEMBER 1, TELECON, WILL BE INCORPORATED INTO THE END OF THE REPORT.

- 6. CONCERNING A SUGGESTED ADDITION TO DISCUSSION:
A NEW PARAGRAPH IS SUGGESTED, TO BE PLACED AFTER THE SECOND LINE ON PAGE 14: "A POSSIBLE MECHANISM LEADING TO INCREASED HEMOLYSIS HAS BEEN PRESENTED BY KIMZEY ET AL (25). THEY FOUND THAT THERE WAS A SIGNIFICANT INCREASE IN ERYTHROCYTE DEFORMITIES IN THE SKYLAB ASTRONAUTS DURING FLIGHT. THEY SUGGEST THAT THESE ALTERATIONS COULD LEAD TO

PREMATURE SEQUESTRATION BY THE RETICULOENDOTHELIAL SYSTEM.
THEY ALSO FEEL THAT THE ALTERATIONS IN ERYTHROCYTE SHAPE
WAS DUE TO MODIFICATIONS IN THE PLASMA ENVIRONMENT RATHER
THAN TO PERMANENT ALTERATIONS OF ERYTHROCYTE METABOLISM

OR STRUCTURAL CHARACTERISTICS SINCE THERE WAS A RAPID
RETURN TO NORMAL PROFILES UPON RETURN TO EARTH. AN
INCREASE IN PLASMA FATTY ACIDS IS KNOWN TO CAUSE REVERS-
IBLE TRANSFORMATIONS IN ERYTHROCYTE SHAPE (25). THIS
MAY BE OF SIGNIFICANCE SINCE THE RATS FLOWN ONBOARD THE
KOSMOS 782 BIOSATELLITE SHOWED AN INCREASED CONCENTRATION
OF PLASMA FATTY ACIDS (26)."

PLEASE NOTE THAT THIS NEW PARAGRAPH CONTAINS TWO REFEREN-
CES. DR. LEON HAS REQUESTED THAT DR. SEROVA PROVIDE HIM
WITH A COPY OF REFERENCE 26.

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- 7. NEW ITEM SUGGESTED BY DR. LEON:
INSERT THE FOLLOWING AS LAST PARAGRAPH IN RESULTS, PAGE 7:
"THE CALCULATED VALUES AND COMPARISONS PRESENTED IN TABLE
III ARE BASED ON DATA THROUGH DAY 60 POST-INJECTION FOR
THE FLIGHT ANIMALS AND THROUGH DAY 64 POST-INJECTION FOR
THE VIVARIUM CONTROL GROUP. SO THAT COMPARISONS BASED ON
AN EQUAL NUMBER OF DATA POINTS COULD BE MADE, ERYTHROCYTE
SURVIVAL PARAMETERS WERE ALSO CALCULATED FOR THE VIVARIUM
CONTROL GROUP EXCLUDING DATA OBTAINED AFTER DAY 60 POST-
INJECTION. IT WAS FOUND THAT NEITHER THE RECALCULATED
SURVIVAL PARAMETERS NOR THE COMPARISONS WERE SIGNIFICANTLY
ALTERED."

BEST REGARDS.

DAVID L. WINTER, M.D.
NASA DIRECTOR FOR LIFE SCIENCES

CC:
ACADEMICIAN OLEG G. GAZENKO

INSTITUTE OF BIOMEDICAL PROBLEMS
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INTERCOSMOS

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